



## HOME PERFORMANCE WITH *ENERGY STAR*<sup>®</sup> A Whole-House Approach to Energy Efficiency

Home Performance with Energy Star<sup>®</sup> is a national program for existing homes designed to help homeowners bring their homes up to Energy Star standards for comfort, safety, health, durability, and energy efficiency. This is a national program sponsored by the U.S. Department of Energy and brought to you by the Idaho Office of Energy Resources.

The program covers several aspects of your home, including the heating, ventilating and air conditioning (HVAC) system, ductwork, insulation, and windows. These systems are evaluated separately and collectively to show the potential for improved energy efficiency.

There are **four** parts in this program:

### Part 1 – Diagnostic Testing

In order to learn about your home and what needs to be done to bring it to improve its efficiency, a series of inspections and diagnostic tests, known as a Comprehensive Home Assessment (CHA), need to be conducted by a certified Home Performance Specialist (HPS).

An HPS is a private contractor who will charge a fee for his services. A list of HPSs is available from the Office of Energy Resources or may be included with this document. The list is also available online at [www.homeperformance.idaho.gov](http://www.homeperformance.idaho.gov). You will need to make an appointment with an HPS so he can visit your home and conduct the tests.

You should discuss his fee prior to him visiting your home. Fees may vary, so it's good to discuss the amount for all the tests with each HPS in your area.

When your HPS visits your home, he will conduct a Comprehensive Home Assessment, which usually takes about two to three hours. Tests will include:

- a. A visual inspection of the home's condition, including in the attic and basement or crawl space;
- b. A Blower Door may be used to measure the leakiness of your home and locate the sources of those leaks;
- c. A Duct Blaster may be used to measure the leakiness of your ductwork if your home is equipped with a forced air duct system;
- d. Essential health and safety tests to determine whether major combustion appliances (furnace, water heater, gas dryer, gas fireplace, etc.) are operating safely and are not likely to back draft carbon monoxide or other combustible products into your home.

### Part 2 – Diagnostic Evaluation

Using the results of the Comprehensive Home Assessment, your HPS will meet with you and explain the recommended improvements that need to be made to your home. The HPS may also provide a rough estimate of associated costs, expected benefits, and cost savings of the recommended improvements.

Once you have decided to participate in the program, you can discuss who will act as the project manager for the work. You can act as your own project manager and perform the functions of a general contractor or you can hire a professional general contractor. Using your list of recommended improvements, you should get bids for each project. If using a general contractor, he may solicit bids and subcontract the work.

The HPS may be willing to serve as the general contractor or program manager if he makes proper disclosure to you of financial interest in the work done. Some HPSs offer this service and coordinate delivery of efficiency services to homeowners.

You will need to solicit bids for the improvements recommended by your HPS. If possible, solicit several companies for bids for the work and compare them. Your HPS can help you determine which company will provide the best product and service. Remember, the lowest bid may not provide the best product or service.

When gathering bids, make sure each bid is in writing and explains what will be done and how long it will take. If you are applying for a Home Performance Loan through the Office of Energy Resources, make sure each company understands that the bid must remain valid for at least four weeks while the loan application is being processed.

**Note: The Idaho Office of Energy Resources strongly recommends using only contractors and trade partners who are registered with the state of Idaho as of Jan. 1, 2006, as required by law.**

### **Part 3 – Financing**

Before you start any work, make sure your financing is secure. The Office of Energy Resources offers a five-year loan at 4 percent interest for the Home Performance With Energy Star program. If the application is not available in your Home Performance packet, you can request one by calling the Idaho Energy Hotline, **1-800-334-SAVE**, or by downloading one from the Office website at [www.energy.idaho.gov/energy](http://www.energy.idaho.gov/energy). Look for “Low Interest Energy Loans” link in the middle of the page, and then look for the Home Performance link on the right side of the next page.

Using the bids collected by your project manager, fill out the Home Performance With Energy Star application and send it to the Office of Energy Resources along with a copy of each bid that is being used. The application process will take about three to four weeks, and needs to be completely approved before any work is started on your home.

### **Part 4 – Completing the Work**

As soon as your financing is secure, you can instruct your general contractor (or the sub contractors you've accepted bids from) to begin the work. It's a good idea to meet with the general contractor or sub contractors at the beginning of each day to review work that's been completed and what will be done that day. Being involved is particularly important if a heating and/or cooling system is being installed. This gives you the opportunity to learn how the system operates and what type of maintenance is recommended.

You may also want your HPS to visit the site periodically to observe the work and offer input, since he will be responsible for certifying the work meets the intent of the program.

Once all the work is completed, your HPS will conduct the post-tests to certify the home. The Office of Energy Resources will then issue a Home Performance with Energy Star certificate to the HPS, who will deliver it to you.

If you have been approved for a loan from the Office of Energy Resources, the certification will allow the Office to release the funds to the lending institution that performed the credit approval. You will be notified when that agency has the funds and arrangements will be made for you to meet with the lender, sign the loan papers, and receive the two-party check(s) made to you and each sub-contractor. Within a few weeks, you will receive a payment booklet from the Office of Energy Resources.

## Home Performance With Energy Star Program Information

The Idaho Office of Energy Resources manages two programs – Home Performance with Energy Star and ENERGY STAR Homes Northwest. These programs created a network of independent Home Performance Specialists trained and certified by the Residential Energy Services Network (RESNET) standards. RESNET, a resource for building science technology, establishes standards for assessing and improving new and existing homes. Your HPS contractor is trained in a “whole-house” approach of inspecting and testing that allows them to identify and evaluate energy-efficient improvements using recognized building science concepts.

### Home Performance Specialists

Home Performance Specialists are not building inspectors. They are technical consultants familiar with building construction and building science, and should be used as a technical resource by you and your contractor. You are encouraged to accompany the HPS as he performs his work in your home. Advise him of any issues or concerns you have about your home, such as drafts, cold or hot rooms, discomfort, evidence of moisture or mold, strange smells, or even physical symptoms, such as persistent headaches.

### Performance Specifications

#### Tier I Improvements

- **Attic insulation** – R-38 minimum to R-48 in colder areas
- **Wall insulation** – Insulate to the greatest extent possible depending on construction. Use blow-in cellulose insulation installed to a density of 2.5 to 3 pounds-per-cubic-foot if stud cavities are uninsulated.
- **Floor insulation** – R-30 minimum in joist cavities or create a conditioned crawl space.
- **Conditioned Crawl Space** – Insulate exterior foundation walls using foam board insulation to R-19 minimum. Permanently seal all but one outside air vents at which mechanical ventilation must be installed. A new floor register open to the crawl space must be installed to provide make-up air from the house. Use .006-inch poly sheeting on the crawl space floor with joints overlapping 6 inches minimum and sealed with mastic and tape.
- **Duct sealing** – Seal supply and return ducts to the extent possible to achieve 50 percent reduction in air leakage through the duct system. If this is not possible, the system must be improved to achieve a leakage rate equal to or less than 10 percent of the conditioned floor area.
- **Building envelope sealing** – Using a blower door, the building envelope must be evaluated for leakage at penetrations. Seal leaking penetrations to achieve as low a leakage rate as is feasible, down to the minimum ventilation level of 0.35 natural air changes per hour for the home.

**Tier II Improvements** (All Tier I improvements must be done before Tier II improvements are eligible for funding inclusion.)

- **Gas furnaces** – If a new furnace is to be installed, install a unit rated at 90% AFUE or higher.
- **Heat pumps** – If a new heat pump is to be installed, install a unit rated at **HSPF 8.5** and a **SEER rating of 13 minimum**.
- **Central air conditioners** – If a new air conditioner is to be installed, install a unit rated at **SEER 13 minimum** and have the system commissioned.
- **Windows** – If new windows are to be installed, they must be NFRC rated with a minimum U-value of 0.35. If the windows have a lower U factor, they will perform even better.

## **Post-test and inspection**

The work performed on your home often results in your home being more airtight. To ensure that the increased air tightness does not cause health and/or safety issues, your HPS is required to repeat some tests conducted in the initial Pre-test. It is strongly recommended that you be present during the post-tests.

On rare occasions, this testing process will reveal conditions that do not meet the program's health, safety, and/or technical requirements. Should this be the case, your HPS will outline additional work that will be required before a Home Performance with Energy Star Certificate of Compliance can be issued.

## **Certificate of Compliance**

When all the work is substantially complete and the final tests and inspections are done, your HPS will contact the Office of Energy Resources where the Home Performance With Energy Star certification will be processed. Your Home Performance With Energy Star certificate will be mailed to your HPS, who will deliver it to you.

If you have been approved for a loan through the Office of Energy Resources, the certificate is required before the funds are released for payment to the contractors.

If you have additional questions about the Home Performance With Energy Star program, call the Idaho Energy Hotline, 1-800-334-SAVE, and ask to speak to one of the program specialists.

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